



DragonForce: Critical Collaboration Platform to Prevent, Plan for and Respond to the COVID-19 Crisis

Executive Summary

Drakontas LLC proposes to deploy its critical collaboration platform DragonForce to prevent, plan for, and respond to a public health emergency event. The COVID-19 crisis is challenging agencies to effectively connect, coordinate, and communicate with personnel from multiple, disparate organizations at the local, state, and federal levels. There is an urgent need to collect and distribute mission-critical information to respond to the crisis today while making informed decisions and taking appropriate action to plan for tomorrow.

DragonForce is a command and control platform that deploys on any smartphone or tablet in seconds and runs on any standard web browser to manage operations more quickly, safely, and effectively. DragonForce utilizes industry-leading security to provide powerful yet easy-to-use collaboration tools to command, control, and collaborate with personnel in the field.

DragonForce enables the dynamic formation of secure, collaboration groups with personnel from any agency and equipping them with a tightly integrated set of tools including secure text messaging and file sharing, real-time personnel and asset tracking, collaborative whiteboarding for tactical planning on maps, images or floorplans, and the ability to capture situation reports and coordinate tasks and logistics during multiple simultaneous operations.

Problem Statement

With the current influx of patients due to the COVID-19 pandemic, our healthcare system and professionals are overwhelmed. Public health organizations are dealing with an unusual predicament that requires an open line of communication across the distinct federal, state, and local agencies, along with municipalities, to coordinate an emergency response to the Coronavirus crisis. The Center for Disease Control and Prevention (CDC) and other health departments and administrations are working proactively to reduce public concern and minimize the spread of COVID-19. However, the recent surge of patients experiencing flu-like symptoms is flooding the hospital systems so much so that healthcare professionals are in short supply of vital medications, specialty equipment (e.g., N95 masks, ventilators), and essential personal protective equipment (PPE).

Decision-makers are confronted by a logistic and situational awareness problem and a command and control problem without the ability to accurately answer basic questions like, “What is the status of my staff, equipment, supplies, and support? How do I direct my staff and members of supporting agencies to help me? What is the identity, location, and operational status of my people, resources, and assets? How can I communicate with and direct the actions of individuals I need to work with more efficiently without adding complexity?” DragonForce is NOT a medical solution – it is a logistics and coordination aid.

Health organizations are now expected to accommodate, track, triage, and quarantine an increasing number of sick patients while taking preventive measures for their safety, all while



dealing with an international shortage of critical hospital medications and resources. For the distribution of effective COVID-19 medications and drugs specific to respiratory issues, as well as protective face masks, gowns, gloves, and other essential equipment, communication and coordination between federal agencies, pharmaceutical companies, drug, and product manufacturers are required for the recovery of infected patients and the wellness and safety of the general public.

Background

Drakontas is a FirstNet app listed small business with a mission to develop, evaluate, and promote interoperable communications solutions that enhance safety and improve the operational efficiency of those who protect and serve the community. One of the company's central software initiatives has been the development of situational awareness and secure collaboration tools for first responders. Drakontas provides access to DragonForce, the company's critical collaboration platform, which was trialed and evaluated with funding from the US Department of Justice, Office of Justice Programs, and the National Institute of Justice.

Solution

Providing a common operating picture (COP) through shared situational awareness is critical for the management of complex public health emergency operations. The CDC and other federal agencies have documented the importance of shared situational awareness to respond to natural disasters, terrorist events, and complex emergencies that require a multi-jurisdictional and multidisciplinary response.

Achieving a common operating picture can be especially challenging for public health officials who often share objectives across various agencies, organizations, and municipalities, particularly for large scale, complex emergencies. Specifically, when large numbers of volunteers or other minimally trained individuals are called upon, as seen with this response to COVID-19, perform structured tasks under the guidance and supervision of professionally trained public health agents. DragonForce provides the supervision and direction to operate remotely, thus further increasing the need for a robust collection of command and control situational awareness tools. The information captured through the DragonForce platform to respond to this crisis will augment the approaches and workflows to communications enabling public health and safety officials from local, state, federal and tribal agencies to seamlessly and rapidly acquire, store, distribute and view the information needed during an emergency event.

DragonForce Core Platform



The DragonForce platform empowers administrators and field personnel to access information visually – such as the GPS location of field personnel, assets, and resources, mapping, secure messaging, user/device status, shared multimedia, and whiteboard annotations. These features enable users to create a common operating picture and, thus, collaborate in real-time during demanding in-field responses where resources, such as operational status, connectivity, security, and awareness, are critical to operational success.

Capabilities

To help better understand the capabilities provided by the situational awareness tools in DragonForce, consider **Figure 1**, which depicts a screenshot of a command center view of DragonForce. (Similar capabilities are also provided on mobile devices). The primary tools are:

- **Personnel Tracking:** This tool allows for the real-time tracking of smartphones, tablets, and computers. If operating in a GPS denied environment, location can be manually entered by dead reckoning or “pinning” a user’s position on the map.
- **Secure Messaging:** This tool allows command center users and individual mobile unit users to compose and transmit text messages or images to one another. Messages can be broadcast to all users or sent privately to a single user. Also, *talk groups* can be established to limit communication to specific groups of users. Finally, each message is *time-stamped* with the author’s identity and time the message was created.
- **User and Device Status:** This tool informs users as to what other team members are currently available and what is their current operational state. Operational state information includes username, alias, network connection, device type, department, current status, operational notes, and GPS availability.
- **Shared Whiteboard:** This tool provides a collaborative whiteboard where multiple users may contribute annotations to a base graphic or map. The base graphic may be a pure white background, or it can be any other raster graphic, such as a map, photograph, or floor plan.
- **Multimedia Sharing:** This tool allows users to share various media. Command centers can transmit images or videos to mobile units. For example, a command center may acquire a photograph of a suspect, which can be shared with users. Similarly, mobile units equipped with a suitable camera can capture images or videos, which can be transmitted to command center users.
- **Situation Reports & Dashboards:** Custom forms and situational reports can be added on the fly to collect data, manage logistics, and monitor the operational status of any operational need for that agency.
- **SMS Alerting & Call Out:** This tool provides the capability to quickly send an SMS message directly from DragonForce’s web or mobile application to any group or individual. Contact resources directly using any cell phone carrier SMS service to provide critical instructions, requests or calls for service. Capture the user’s response directly within DragonForce even if they aren’t using the mobile app.

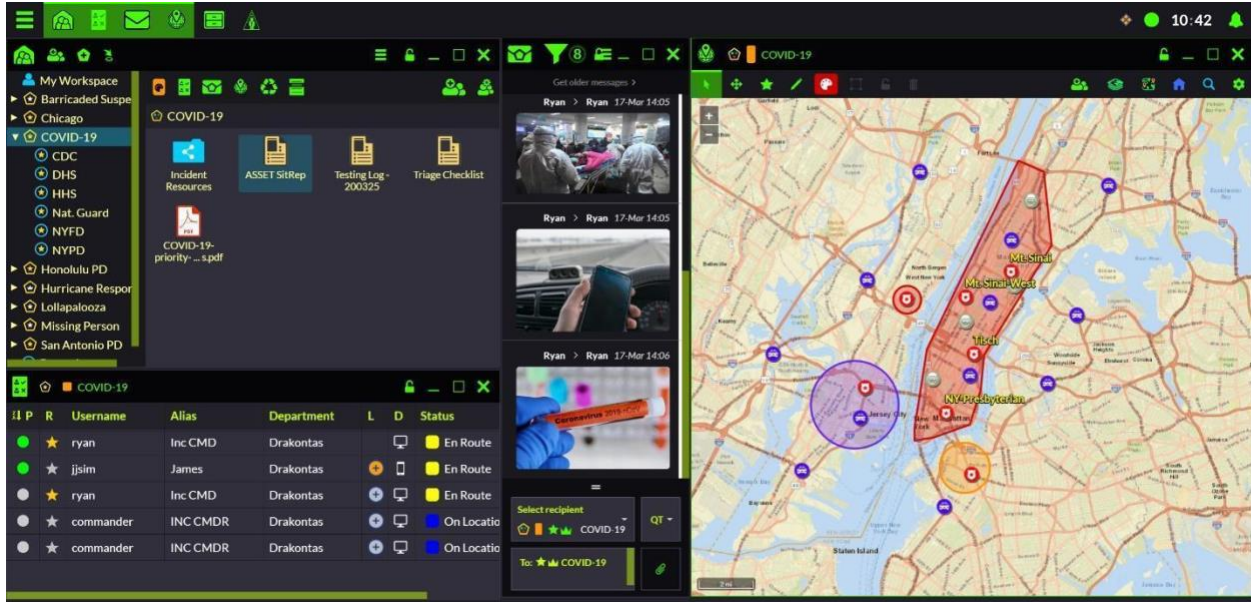


Figure 1: Standard Configuration Command Center View of DragonForce™

Pandemic Planning

The COVID-19 response to date has required real-time management of a large number of people converging on a specific locale, with associated logistical issues such as traffic, resource management, acquisition, and disbursement PPE's, N95 masks, COVID-19 test kits and collecting results of those tests. Including record keeping, volunteer/worker support, and the potential need for protection of volunteers/workers and those served from the contagious agent, the need for communication with the ability to share specific information becomes clear.

Figure 2 illustrates the ability to share critical information with inter-department or inter-agency deployments from the Emergency Operations Center (or EOC) to groups made up of field personnel.

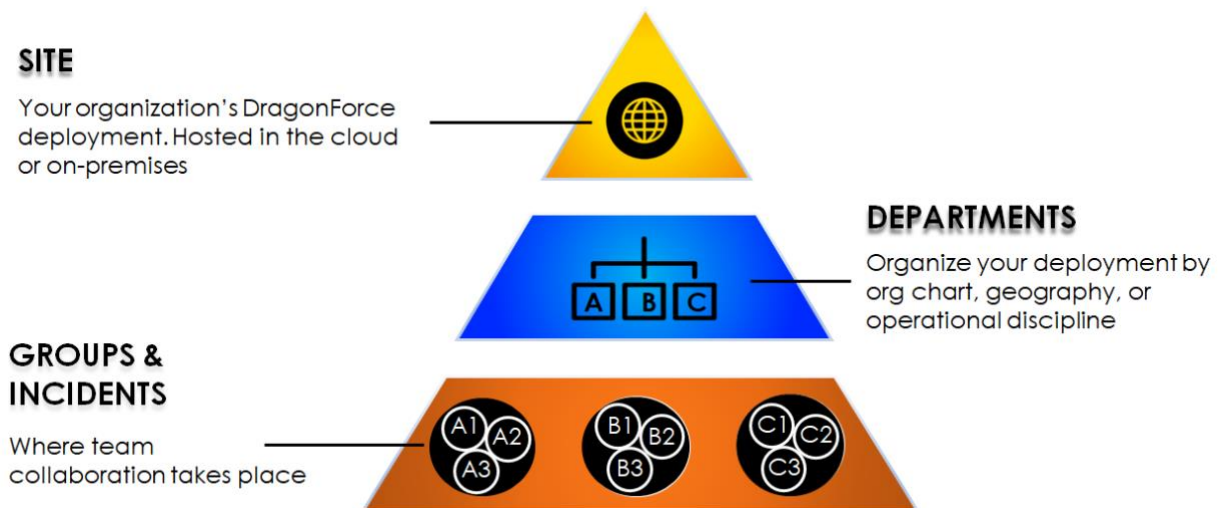


Figure 2: DragonForce Field Interaction Model



Communication between agencies, departments, and groups occurs in real-time. For example, each field operative belonging to a specific group may report every hour to the EOC on the following status:

- Remaining number of test kits / PPE supplies
- Number of people who have received COVID-19 tests
- Number of people waiting to receive COVID-19 tests
- Triage estimates of acutely ill people waiting online
- Staffing levels (doctors, nurses, technicians, support workers, volunteers)
- Traffic conditions, building conditions, and rumors

Each field operative creates and consumes information that must ultimately be aggregated and transmitted to the EOC. Also, the command center needs to assign tasks to the various field personnel while monitoring the task progress during the operation.

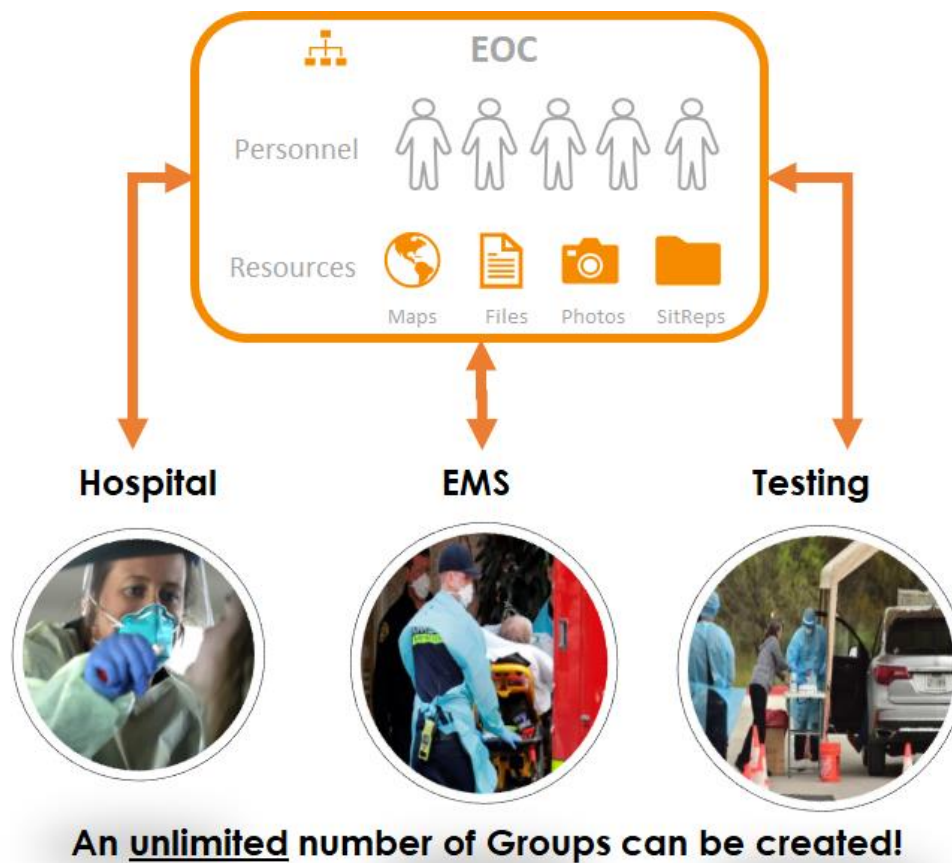


Figure 3: EOC to Field Personnel Information Flow

Communications today are primarily supported by mobile and portable radios. While voice communications are essential in any emergency operation, the sole reliance on voice



communications can hamper a response. **Figure 3** illustrates critical collaboration and situational awareness tools that can augment and enhance a response through the sharing and exchange of task assignments, personnel and volunteer tracking, situation reports, location information, hot spots, secure message timelines, and visual media. These situational awareness tools are critical for establishing a rich common operating picture.

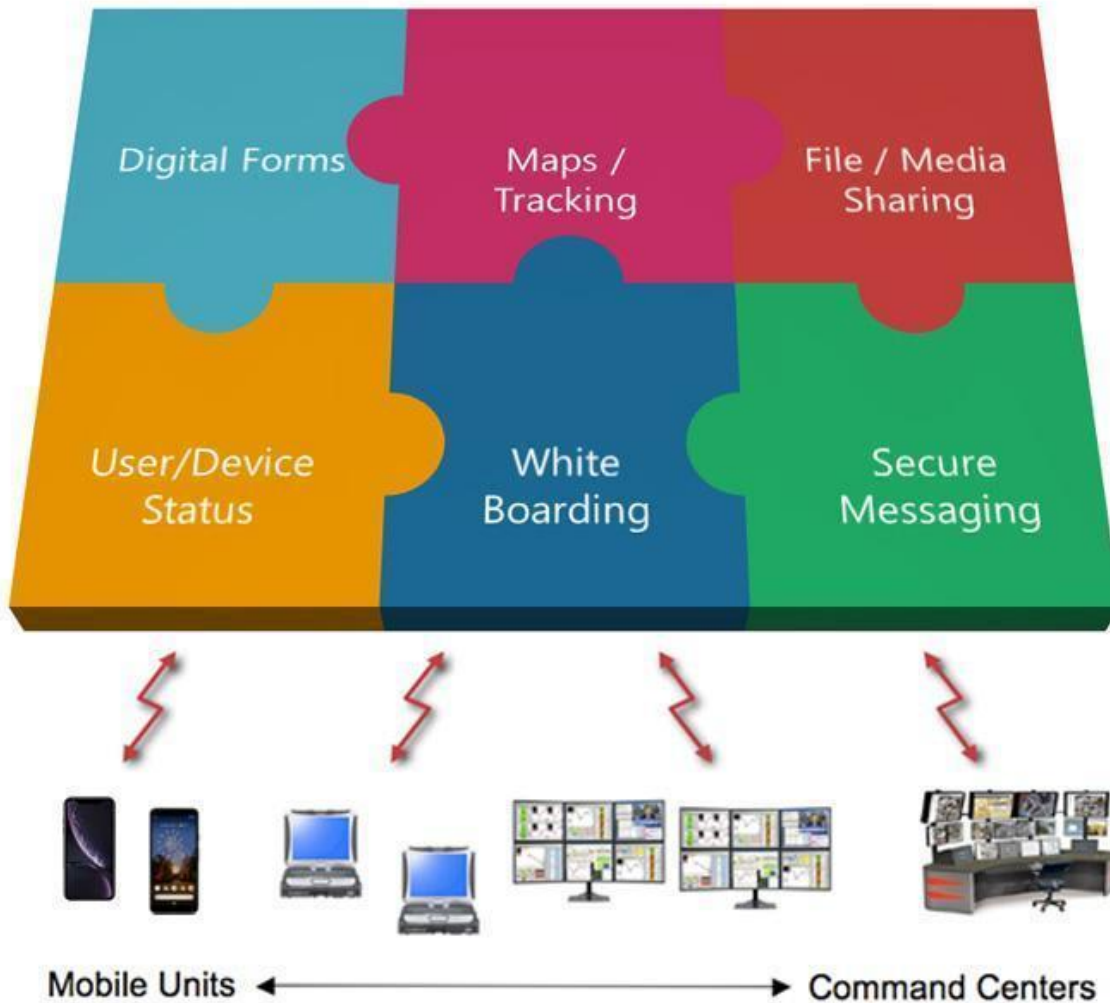


Figure 4: DragonForce Seamless Interoperability Deployment

Figure 4 illustrates how our DragonForce platform seamlessly interoperates with mobile devices and command centers. Field personnel are assigned or bring their smartphone, which hosts the collaboration tools. The commander utilizes a laptop, similarly, outfitted with the situational awareness software tools. Using these tools, the commander specifies and distributes a series of instructions, situation reports (or digital forms), and tasks for their field personnel to execute and report. The instructions may contain critical *day-of-training* materials about the particular response while capturing real-time information. Field personnel execute and update the progress of their tasks on their mobile devices with the ability to view all responses from other groups and agencies.



In addition, field personnel record vital information using the situation report tool, such as quantities of critical needs like masks, gowns, and gloves as well as hospital bed status and response capabilities for each medical facility. This information is securely transmitted to the EOC to gain a real-time picture and operational readiness. The commander can quickly assess the overall status of the medical facility, thus allowing him/her to make quicker and more informed decisions. Moreover, each commander can promptly generate dynamic status reports and transmit these reports to the EOC.

Conclusion

DragonForce is the critical collaboration platform to prevent, plan for, and respond to any emergency operation. Nothing has been more challenging to our national and international agencies than their response to this global pandemic. The COVID-19 crisis is challenging agencies to effectively connect, coordinate, and collaborate with personnel from multiple, disparate organizations at the local, state, and federal levels. DragonForce is an industry-leading collaboration platform with thousands of successful operations built to be highly scalable to accommodate tens or tens of thousands of users managing incidents at the international, federal, state, or local levels. DragonForce can be freely downloaded and configured in seconds on any current device (smartphone, tablet, and laptop).

DragonForce requires minimal training and is built for immediate deployment to provide the tools decision-makers and field operators need to achieve situational awareness and command and control so that they can perform their tasks more quickly, safely, and effectively. Mobile operators require no training to use DragonForce's intuitive application toolset effectively. Incident commanders can be up and running in 15 minutes or less, providing maximum operational effectiveness.

DragonForce empowers members of any agency to come together in a secure, collaborative workspace to coordinate day-to-day to large scale operations by giving users access to the intelligence they need when they need it.

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